I.1
3/9/01

HEALTH CONSULTATION

SWIFT AGRICULTURAL CHEMICALS FAIRMONT CITY PLANT
FAIRMONT CITY, ST. CLAIR COUNTY, ILLINOIS

CONCLUSIONS

1) The Swift Agricultural Chemicals Corporation site does not pose a public health hazard.

2) Children contacting contaminated sediments off the site are not expected to experience adverse health effects. Past and current on-site workers are not expected to experience adverse health effects as a result of contacting surface contaminants.

3) Most contaminants on and off the site are probably not due to the fertilizer operation at the Swift Agricultural Site. They are probably from the Old American Zinc site that borders the site to the north and south.

4) The pesticides found on and off the site may be due to site activities, but that has not been confirmed.

RECOMMENDATIONS

1) Although no hazard is posed by the contaminants found during the site investigation, area residents, especially children, need to reduce or eliminate contact with soil contaminated with arsenic, lead, and cadmium found at the Old American Zinc site. Those issues (Attachment 1) are addressed in a health consultation for Old American Zinc, dated February 14, 1996.

2) The type of pesticides mixed with the fertilizer should be determined to see if pesticides found on and off the site are related to site activities.

PREPARER OF THE REPORT

David R. Webb, M.S.
Environmental Toxicologist
Illinois Department of Public Health

REFERENCES

[1] ATSDR Draft Toxicological Profile for Cadmium. 1991. Agency for Toxic Substances and Disease Registry, Atlanta, GA.

[2] ATSDR Draft Toxicological Profile for Arsenic. 1991. Agency for Toxic Substances and Disease Registry, Atlanta, GA.

[3] ATSDR Update Toxicological Profile for Polycyclic Aromatic Hydrocarbons. 1993. Agency for Toxic Substances and Disease Registry, Atlanta, GA.

[4] ATSDR Update Toxicological Profile for Lead. 1993. Agency for Toxic Substances and Disease Registry, Atlanta, GA.

[5] E & E, Draft Screening Site Inspection Report. December 13, 1989. Chicago, IL

[6] E & E Focused Site Inspection Prioritization Enclosures 1 & 2. September 18, 1995. Chicago, IL

[7] E & E Screening Site Inspection Report for Swift Ag Chem. Fairmont City Plant. May 2, 1990. Chicago, IL

[8] E & E Screening Site Inspection Work Plan for Swift Ag. Chem. Fairmont City Plant. May 2, 1989. Chicago, IL

[9] IDPH, Old American Zinc Health Consultation. February, 1996. Springfield, IL

[10] IEPA, Memorandum from Tom Miller Ofc Collinsville to Division File. August 22, 1989.

[11] IEPA. Site Team Evaluation Prioritization. 1996. Springfield IL

[12] USEPA. Potential Hazardous Waste Preliminary Assessment. Swift Agricultural Chemical Corp. April 4, 1996.

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HEALTH CONSULTATION

SWIFT AGRICULTURAL CHEMICALS FAIRMONT CITY PLANT
FAIRMONT CITY, ST. CLAIR COUNTY, ILLINOIS

CERTIFICATION

This Swift Agricultural Chemicals Corporation Site Health Consultation was prepared by the Illinois Department of Public Health under a cooperative agreement with the Agency for Toxic Substances and Disease Registry (ATSDR). It is in accordance with approved methodology and procedures existing at the time the health consultation was begun.

Gail D. Godfrey
Technical Project Officer
Division of Health Assessment and Consultation
ATSDR

The Division of Health Assessment and Consultation, ATSDR, has reviewed this health consultation and concurs with its findings.

Lisa C. Hayes for
Richard E. Gillig
Chief, State Programs Section
Division of Health Assessment and Consultation
ATSDR

APPENDICES

TABLES

In the data tables that follow, the listing of a contaminant does not mean that it will cause adverse health effects from exposures. The tables summarize data from both the 1989 and 1996 investigations. The tables include the following abbreviations:

J = estimated value, qualitatively correct but quantitatively suspect
B = analyte found in the associated blank and indicates possible/probable blank contamination
P = alternative analytical method used to analyze for this compound
C = Confirmed by GC/MS (for pesticides)
D = Analyzed at a secondary dilution factor
E = Estimated value of a compound that exceeded the calibration range
U = Compound analyzed for but not detected
N = Spiked sample
W = Post digestion spike for furnace AA analysis

Table 1 - Summary of Analyses Conducted at the S

Compound/CV	1989 Samples taken by E & E (results in ppm)										
	Soil	Soil	OS Sed	Sub-Soil	Soil	ONS Sed	OS Sed	OS Sed	OS Sed	OS Sed	OS
	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	
Methylene Chloride	.006J	.009	.027	.013	.005J	.009J	.030J	-	-	.030J	.0
Acetone	-	-	.033	-	.054	.046	.240J	.057J	-	.210J	.1
2-Butanone	-	-	-	-	-	-	.022J		-	.021J	.0
Benzene	-	-	.004J	-	-	-	-		-	-	
Tetrachoroethene	-	-	-	-	-	-	-	.013J	-	-	
Toluene	.005J	.016	.036	.014	.11	-	-	.009J	-	.005J	
Ethyl Benzene	-	-	.005J	-	-	-	-		-	-	
Xylenes (total)	-	-	.022	-	-	-	-		-	-	
SEMIVOLATILES											
Phenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
4-Methylphenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2-Nitrophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2,4-Dichlorophenol	-	-	-	-	-	-	-		-	1.3	
1,2,4-Trichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Naphthalene	-	0.082J	-	-	-	-	-		.13J	.36J	
4-Chloro-3-Methylphenol	-	-	-	-	.2J	-	-		-	-	
2-Methylnaphthalene	-	.046J	-	-	-	-	-	.13J	.29J	.87J	
2,4,6-Trichlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2-Chloronaphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Acenaphthalene	-	.045J	-	-	.1J	-	-		-	-	
Acenaphthene	-	-	-	-	.087J	-	-		.17J	.21J	
2,4-Dinitrophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	

Dibenzofuran	-	-	-	-	-	-	-		.23J	.27J
Diethyl Phthalate	-	-	-	-	-	-	-		-	-
Fluorene	-	-	-	-	-	-	-	1.7J	.24J	.27J
N-Nitrosodiphenyl amine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	-	.098J	-	-	.24J	-	-		-	-
Pentachlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	.66	.26J	-	-	1.1	-	.67J	1.4J	3.6	4.3
Anthracene	.12J	-	-	-	.26J	-	-		.63	.52J
Carbazole	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butyl phthalate	-	-	-	-	-	-	-		-	.17J
Fluoranthene	2.3	.29J	-	2.7	1.8	.78J	2J		3.8	5.2
Pyrene	3.9J	.48	.5J	3.9J	1.9J	.87J	2.6J		3.4	4J
Butylbenzyl Phthalate	.16J	-	-	-	-	-	-		-	-
Benz(a)Anthracene	1.2J	.23J	-	.64J	1.1	-	1.7J		1.7	1.8
bis(2-ethylhexyl) phthalate	6.1J	1.4	.6J	5	.27J	-	3.4J		4.3	1.6
Chrysene	2J	.36J	.33J	.83J	.99	1.7J	2.6J		1.6	1.8
Benzo(b)Fluoranthene	2.8J	.43J	.29J	.26J	1.2	-	5.3		1.8	1.7
Benzo(k)Fluoranthene	1.3J	.31J	-	.25J	.8J	1.3J	-		1.2	.53J
Benzo(a)Pyrene	1.7J	.27J	-	.35J	.62J	.84J	21J		1.2	.63J
Indeno(1,2,3-cd) Pyrene	1.4J	.32J	-	-	.53J	-	1.8J		.84	.83J
Benzo(g,h,i)Perylene	-	.32J	-	-	.43J	-	1.8J		.8	.44J
Dibenz(a,h)Anthracene	.24J	-	-	-	-	-	-		.19J	-
PESTICIDES/PCBs										
Alpha-BHC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beta-BHC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Delta-BHC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma-BHC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	-	-	4.8DC	-	-	-	.051		-	-
Aldrin	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Heptachlor Epoxide	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Dieldrin	.39	.25	.29	-	1.4J	4D	.34DJ	.27	.088	.36	
4,4'-DDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Endrin	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Endosulfan Sulfate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
4,4'-DDD	-	-	-	-	-	-	-	-	.049	1.5DJ	
4,4'-DDT	-	-	-	-	-	-	-	-	.033J	1.7DJ	
Methoxychlor	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Endrin Ketone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
alpha-Chlorodane	-	-	-	-	-	-	-	-	-	-	.0
gamma'Chlorodane	.23J	-	1.7DJ	-	.16J	.35J	.43DJ	.14J	.0064J	-	.0
INORGANICS											
Antimony	13.4B	-	-	-	-	-	-	-	-	12.2B	
Arsenic	13.7JNWB	6.2JNB	4.4JN	-	28.5JN	13.3JNB	26.9JNB	24.6JN	18.6JN	27.8JN	5.
Barium	121	83.9	458	628	179	585	197	345	304	571	
Beryllium	1.8	1.6	.56B	3.1	1.3	2.1	2.1B	1.7B	.45B	.74B	
Cadmium	28.7	27.8	14	18.7	67	76.2	344	330	5.7	6.4	
Chromium,trivalent hexavalent	51.6	48	33.3	397	56.8	83	76.6	455	29.5	90.1	
Cobalt	14	6.7B	3.2B	27.6B	11.5B	9.1B	6.5B	11B	3.3B	4.1B	3
Copper	1,530J*	688J*	112J*	84.8J*	618J*	457J*	728J*	446J*	144J*	359J*	18
Lead	523JN	1,790JN	526JN	281JN	3,510JN	1,300JN	1,667JN	2,200JN	669JN	1,800JN	2,03
Manganese	3,980	2,650	462	1,830	883	254	930	735	182	118	
Mercury	.4JN	.6JN	5.3JN	-	6.4JN	2.7JN	8.8JN	12JN	6.2JN	10JN	
Nickel	59.4	32	22.2	79.7	39.3	8.2B	21.9B	26.6	8.9B	3B	
Selenium	-	-	.35JNWB	-	-	-	3.1JNB	1.8JNB	.57 JNWB	.91 JNWB	
Silver	31.5J*N	2.2J*NB	1.4J*NB	3.4J*NB	6.6 J*N	6J*N	12J*N	7.2J*N	2.2J*N	2.6J*NB	3.9
Thallium	1.2J+B	-	-	-	2J+B	-	2.4JWB	1.3JWB	.7JWB	-	
Vanadium	59.3	56.2	38.3	124	43.6	119	85.4	77.2	28.5	61.4	
Zinc	8,210	27,400	3,760	2,660	21,600	8,230	32,700	23,400	839	1,370	1,
Cyanide	-	2.0JN	-	4.2JN	1.1JN	2.3JN	-	-	-	-	

ppm - parts per million
-: compound analyzed, but not detected in the sample

Table 2 - Onsite Soil and Sediment Contaminants of Concern for Swift Agricultural Chemical Fac

Compound/CV	Soil	Soil	Sub-Soil	Soil	ONS Sed	SOIL (BKG)	X101	X102	X103	X104	Field Blank	Compariso Soil (ppm)
	S1	S2	S4	S5	S6	S12						
SEMIVOLATILES												
Benzo(a)Pyrene	1.7J	.27J	.35J	.62J	.84J	-	.18J	3.1	1.6	1.9	-	0.1
PESTICIDES/PCBs												
Heptachlor	-	-	-	-	-	-	.17	.059	.037	.011JP	-	0.2
Aldrin	NA	NA	NA	NA	NA	NA	3.9PEC	.31P	.14P	.0059JP	-	0.06/2/20
Heptachlor Epoxide	NA	NA	NA	NA	NA	NA	.03P	.021JP	.016JP	.039P	-	0.08
Dieldrin	.39	.25	-	1.4J	4D	-	-	.33UX	.32	-	-	0.1/3/40:0
INORGANICS												
Antimony	13.4B	-	-	-	-	-	6.5B	14.9B	14.5B	47.5	-	0.8/20/300
Arsenic	13.7JNWB	6.2JNB	-	28.5JN	13.3JNB	8.4JN	30.9	17.9	18.7	25.3	-	0.6/20/200
Beryllium	1.8	1.6	3.1	1.3	2.1	.48B	.7B	1.4B	1.3B	1B	-	0.2
Cadmium	28.7	27.8	13.7	67	76.2	-	19.2	35.3	33.4	37.3	-	1/40/500
Lead	523JN	1790JN	281JN	3510JN	1300JN	35.3JN	1,010	887	793	1,200	1.6B	NONE
Manganese	3980	2650	1830	883	254	785	806	1,820	1,830	481	1B	300/7,000/
Thallium	1.2J+B	-	-	2J+B	-	-	-	.4B	.6B	.2B	-	NONE
Zinc	8,210	27,400	2,660	21,600	8,230	147	4,590	9,320	9,480	16,000	17.8B	600/20,00

NA: Compound not analyzed for in the sample.
- : Compound analyzed, but not detected in the sample.
ppm - parts per million

Table 3 - Off-site Sediment Contaminants of Concern for Swift Agricultural Chemical Facility (in ppm)

Compound/CV	OS Sed S3	OS Sed S7	OS Sed S8	OS Sed S9	OS Sed S10	OS Sed S11	Field Blank	Comparison Value Soil Concentration	Source
SEMIVOLATILES									
Benzo(a)Pyrene	-	21J	-	1.2	.63J	.99	-	0.1	CREG
PESTICIDES/PCBs									
Heptachlor	4.8DC	.051	-	-	-	-	-	0.2	CREG
Aldrin	NA	NA	NA	NA	NA	NA	-	0.06/2/20	RMEG
Heptachlor Epoxide	NA	NA	NA	NA	NA	NA	-	0.08	CREG
Dieldrin	.29	.34DJ	.27	.088	.36	.21	-	0.1/3/40:0.04	CEMEG/CREG
INORGANICS									
Antimony	-	-	-	-	12.2B	-	-	0.8/20/300	RMEG
Arsenic	4.4JN	26.9JNB	24.6J+N	18.6JN	27.8JN	5.5JN	-	0.6/20/200	C EMEG
Beryllium	.56B	2.1B	1.7B	.45B	.74B	.89B	-	0.2	CREG
Cadmium	14	344	330	5.7	6.4	14.1	-	1/40/500	C EMEG
Lead	526JN	1,667JN	2,200JN	669JN	1,800JN	2,030JN	1.6B	NONE	NONE
Manganese	462	930	735	182	118	754	1B	300/7,000/100,000	rmeg
Thallium	-	2.4JWB	1.3JWB	.7JWB	-	-	-	NONE	NONE
Zinc	3,760	32,700	23,400	839	1,370	1,680	17.8B	600/20,000/200,000	I EMEG & RMEG

NA: Compound not analyzed for in the sample.
- : Compound analyzed for, but not detected in the sample.
ppm - parts per million

Table 4 - June 4 and 5, 1996 Groundwater Sample Results (in ppb).

Compound/CV	G101	G102	G103	G104	G105	Field Blank	Comparison Value for Water (ppb)	Source
SEMIVOLATILES								
Benzo(a)Pyrene	-	-	-	-	-	-	0.000005	CREG
PESTICIDES/PCBs								
Heptachlor	-	-	-	.000005JP	.000015J	-	0.000008	CREG
Aldrin	-	-	-	-	-	-	0.000002/0.0003	CREG/CEMEG
Heptachlor Epoxide	.000009JP	-	-	-	-	-	0.000004	CREG
Dieldrin	-	-	-	-	-	-	0.000002	CREG
INORGANICS								
Antimony	0.016B	-	-	-	-	-	0.004/0.010	RMEG
Arsenic	0.0278	0.046	0.015	0.031	-	-	0.003/0.010 0.00002	CEMEG CREG
Beryllium	-	-	0.0018B	0.0017B	.0006B	-	0.000008	CREG
Cadmium	-	-	3.150	0.193	0.029	-	0.07/0.02	CEMEG
Lead	0.203B	0.0016B	0.0028B	0.0015B	0.0038	0.0016B	NONE	NONE
Manganese	3.070	4.180	11.500	6.070	3.130	0.001B	0.050/0.200	RMEG
Thallium	-	-	-	-	.0008B	-	0.0004	LTHA
Zinc	0.0102B	0.009B	121.0	31.500	0.731	0.0178B	1/10	LEMEG

- Compound not detected in the sample.
ppb = parts per billion

Table 5 - Calculated Doses and a Comparison to Health Guidelines

Compound/CV	Sediment Concentration Range (in ppm)	Estimated Ingestion Dose (in mg/kg/day)	Health Guidelines		USEPA's Oral Slope Factor	Estimated Increased Cancer Risk	Exceeds The MRL/RfD
			Source	Health Guideline for Soil in mg/kg/day			
SEMIVOLATILES							
Benzo(a)Pyrene	ND - 21J	2.6×10^{-6}	Acute Oral MRL	0.1	7.3	1.9×10^{-5}	NO
PESTICIDES/PCBs							
Heptachlor	ND - 4.8DC	6×10^{-7}	C.O. MRL	0.0005	4.5	2.7×10^{-6}	NO
Aldrin	NA/3.9 (3)	NE/4.9 X 10^{-7}	Chronic Oral MRL	NE	17	NE/8.3 X 10 -6	NO
Heptachlor Epoxide	NA/0.039(3)	NE/4.9 X 10^{-9}	C.O. MRL	0.000013	9.1	NE/4.5 X 10^{-8}	NO
Dieldrin	0.088-0.36	4.5×10^{-8}	C.O. MRL	.00005	16	7.2×10^{-7}	NO
INORGANICS							
Antimony	ND-12.2	1.5×10^{-6}	Chronic Oral RFD	0.0004	N Appl	N Appl	NO
Arsenic	4.4JN-27.8JN	3.4×10^{-6}	Chronic Oral MRL	0.0003	1.5	5.1×10^{-6}	NO
Beryllium	0.45B-2.1B	2.6×10^{-7}	Chronic Oral RFD	0.005	4.3	1.1×10^{-6}	NO
Cadmium	5.7-344	4.3×10^{-5}	C.O. MRL	0.0007	None	None	NO
Lead	526-2,200	2.7×10^{-4}	NAV	NAV	NAV	-	NO
Manganese	182-930	1.16×10^{-4}	NAV	NAV	N Appl	N Appl	NO
Thallium	ND-2.4JWB	3.0×10^{-6}	NAV	NAV	N Appl	N Appl	NO
Zinc	17.8B-32700	4×10^{-3}	C.O. MRL	0.3	N Appl	N Appl	NO
Total Cancer Risk						3.6×10^{-5}	NO

NA: Compound not analyzed for in the sample.

1 - See attached sheet with calculations and assumptions

2 - Calculated using highest sediment concentration

3 - Highest On-site soil results substituted twice it was not analyzed for in sample

4 - Assumes similar mechanisms and cancer types

NE - Not estimated

N Appl - Not Applicable

NAV - Not Available

Table 6. Completed Exposure Pathways

Pathway Name:	Source	Medium	Exposure Point	Exposure Route	Receptor Population	Time of Exposure	Exposure Activities	Estimated Number Exposed
On-site Surface Soil & Sediment	Contaminated Soil & Sediment	Soil & Sediment	On the site	Ingestion Inhalation	On-site Workers	Past Present Future	Working outside on the site	25
Off-site Sediment	Contaminated sediment off the site	Sediment	Children playing in sediment areas.	Ingestion Inhalation	Area Children	Past Present Future	Playing in and with sediments	20

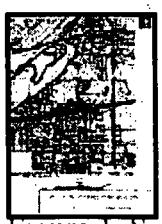

Figure 1. Swift Agricultural Chemicals Corporation Site Location Map

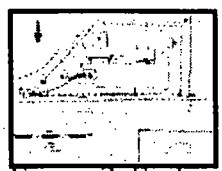

Figure 2. Soil and Sediment Sample Location Map

Figure 3. Soil and Groundwater Samples taken by IEPA in 1996

ATTACHMENT 1

CONCLUSIONS AND RECOMMENDATIONS FROM OLD AMERICAN ZINC HEALTH CONSULTATION

CONCLUSIONS

Based on information reviewed, the Illinois Department of Public Health concludes that:

1. The Old American Zinc site in Fairmont City, Illinois poses a public health threat based on chronic exposure of children to arsenic, cadmium, and lead in the residential soils.

2. Nearby residents are exposed to contaminated airborne particulates which originate onsite. This exposure would be the highest during dry windy periods or when site activity is high. The extent of this exposure and resulting health effects (if any) cannot be determined without sufficient air monitoring data.

3. Worker exposure to on-site contaminants certainly occurs. The highest exposures would likely occur during activities which disturb the waste material.

4. Exposures to site related contaminants would have likely been higher in the past, particularly during smelter operation.

RECOMMENDATIONS

Cease/Reduce Exposure Recommendations

1. Reduce exposure of children to contaminated residential soils as much as possible by using appropriate reduction methods (e.g. covering bare soil with vegetation, "clean" soil, mulch, rock, or asphalt; restricting access to areas with bare soil by fencing; reducing or eliminating soil contact activities such as digging; washing hands and face prior to eating or drinking; and cleaning shoes to reduce the amount of soil being tracked into the house.

2. Remove or contain contaminants that have been left exposed on the surface soil in such a way that they are not released to the air or allowed to move by surface run-off.

3. Protect both the on-site workers and nearby residents from site contaminant exposure by taking precautions (e.g. dust reduction methods, protective equipment) to reduce exposures during any on-site activities that involve disturbing the site wastes.

Site Characterization Recommendations

1. Monitoring of air at exposure points to determine airborne exposure to contaminants. Exposure points would include nearby residences and, if warranted, onsite workers. Baseline air monitoring would be important in determining exposure and could later be used with additional air monitoring to determine the effectiveness of the chosen remedial activity.

2. Performing additional soil sampling in the neighborhoods adjacent to the site to provide a more accurate determination of the extent of off-site soil contamination.

3. Performing additional sampling for mercury in the arsenic leaching area to determine the extent of mercury contamination in that area.

ATTACHMENT 2

Comparison Values Used in Screening Contaminants for Further Evaluation

Environmental Media Evaluation Guides (EMEGs) are developed for chemicals based on their toxicity, frequency of occurrence at National Priority List (NPL) sites, and potential for human exposure. They are derived to protect the most sensitive populations and are not cut off levels, but rather comparison values. They do not consider carcinogenic effects, chemical interactions, multiple route exposure, or other media-specific routes of exposure, and are very conservative concentration values designed to protect sensitive members of the population.

Reference Dose Media Evaluation Guides (RMEGs) are estimates of a daily oral or inhalation exposure to a particular chemical that is unlikely to produce any noncarcinogenic adverse health effects over a lifetime. They are conservative values designed to protect sensitive members of the population.

Cancer Risk Evaluation Guides (CREGs) are estimated contaminant concentrations based on a one excess cancer in a million persons exposed to a chemical over a lifetime. These are also very conservative values designed to protect sensitive members of the population.

ATTACHMENT 3

Calculations for Exposure to Off-site Sediments Based on a 16 kilogram Child

$$\text{Ingestion Dose (ID)} = \frac{\text{Concentrations X Ingestion Rate (IR) X Exposure Factor (EF) X } 10^{-6}}{\text{Body Weight (BW)}}$$

Where IR is 100 mg; BW is 16 kg; and the EF is 0.02

EF = Exposure Frequency X Exposure Duration/Exposure Time
EF = 2 days/week X 26 weeks X 10 years/365 days X 70 years
EF = 520/25550
EF = 0.02

$$\text{ID} = \text{concentration} \times \frac{(IR \times EF \times 10^{-6})}{BW}$$

ID = Concentration (0.125×10^{-6})

ID = (Concentration) 1.25×10^{-7}

Antimony

ID = 12.2 (1.25×10^{-7}/day)
= 1.5×10^{-6} mg/kg/day

Arsenic

ID = 27.8 mg/kg (1.25×10^{-7}/day)
= 3.4×10^{-6} mg/kg/day

Beryllium

ID = 2.1 mg/kg (1.25×10^{-7}/day)
= 2.6×10^{-7} mg/kg/day

Cadmium

ID = 344 mg/kg (1.25×10^{-7}/day)
= 4.3×10^{-5} mg/kg/day

Lead

ID = 2,200 mg/kg (1.25×10^{-7}/day)
= 2.75×10^{-4} mg/kg/day

Manganese

ID = 930 mg/kg (1.25×10^{-7}/day)
= 1.16×10^{-4} mg/kg/day

Thallium

ID = 2.4 mg/kg (1.25 X 10^{-7}/day)
= 3.0 X 10^{-6} mg/kg/day

Zinc

ID = 32,700 mg/kg (1.25 X 10^{-7}/day)
= 4.0 X 10^{-3} mg/kg/day

Benzo(a)pyrene

ID = 21 mg/kg (1.25 X 10^{-7}/day)
= 2.6 X 10^{-6} mg/kg/day

Heptachlor

ID = 4.8 mg/kg (1.25 X 10^{-7}/day)
= 6 X 10^{-7} mg/kg/day

Heptachlor epoxide[1]

ID = 0.039 mg/kg (1.25 X 10^{-7}/day)
= 4.9 X 10^{-9} mg/kg/day

Aldrin[1]

ID = 3.9 mg/kg (1.25 X 10^{-7}/day)
4.9 X 10^{-7} mg/kg/day

Dieldrin

ID = 0.36 mg/kg (1.25 X 10^{-7}/day)
4.5 X 10^{-8} mg/kg/day

[1] - Not analyzed for in off-site sediment, concentration used is highest on-site soil.

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